

Wealden Iron



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WEALDEN IRON RESEARCH GROUP

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Field Notes

compiled by J. S. Hodgkinson

A Romano-British bloomery in Maresfield, East Sussex

The discovery of a bloomery site located at TQ 4580 2845, at the head of the Misbourne valley, on the southern slopes of Ashdown Forest, has already been noted.¹ The Field Group excavated a small trench, approximately 1m by 1.5m, into the slag heap and recovered four sherds of pottery from amongst the slag, which were identified by Luke Barber as late Iron Age or early Romano-British, East Sussex ware. Small quantities of tap slag were noted, together with pieces of reduced fired clay, which were probably debris from a smelting hearth. Slag was detected in a roughly circular area of about 50m², with a depth probably not exceeding 20cm.

An Iron Age/Romano-British iron forging site at Ford, West Sussex

Excavations at SU 995033, by Chris Place, in advance of the construction of a water treatment works have revealed evidence of Late Bronze Age and Late Iron Age/Early Romano-British occupation. From the latter period was a small quantity of iron forging slag, pieces of vitrified lining from a hearth, prills of slag, and hammer scale. The quantities are consistent with the forging of a single, small bloom. No evidence of smelting was found.

Bloomeries in East Hoathly, East Sussex

Straker identified a bloomery in this parish, which was interpreted as at Scallow Bridge (TQ 538176) by Cleere and Crossley.² A recent visit to this site allows a revision of the location to TQ 5392 1730. The site covers an area in excess of 4000m² on the east side of the lane that runs south from the bridge. Both north and south of a small

stream dividing two fields there is a dense scatter of bloomery slag and heavily charcoal-stained soil. A light scatter of slag was also observed in the adjacent portion of the field on the opposite side of the lane, suggesting that the site predated the lane. Many of the slag fragments showed a distinct, reddened colouring, and several examples of cylindrical pieces of slag, believed to have been caused by blocked tuyères, were noticed on the surface. Five sherds of late-Iron Age or Romano-British pottery, one of which was burnished, and dating to the first or second centuries AD, were discovered during field-walking.

Approximately 400m south west of the above site, a further concentration of bloomery slag has been discovered on the southern edge of Cinder Wood (TQ 5361 1706). A single rim sherd of Romano-British pottery has been found on the surface.

We are grateful to Mr D. Harrison for informing us of these sites.

A bloomery in Burstow, Surrey

A scatter of bloomery cinder, including tap slag, has been discovered near a field boundary south of Bransland Wood, centred on TQ 3253 4818. The cinder is much weathered, suggesting that the original site has been widely dispersed by ploughing over a long period. Similarity of location to the site found at Cinderhill, Bletchingley, about 1.5km to the east suggests a similar source of ore.³

We are grateful to Robin Tanner, of Outwood, for informing us of this discovery.

Oaklands Romano-British ironworking site, Westfield, E. Sussex

It is somewhat surprising to relate that no report on this site (TQ 785175) has been published in any of the Group's Bulletins until now. Cleere has suggested that output at the site was such that some 20,000m³ of slag formerly lay here, placing it second only to Beauport Park in magnitude.⁴ Oaklands is the site in Westfield, then owned by Hercules Sharp Esq., where Roman coins were reported by Lower in 1849.⁵ Straker's account is the most informative, describing

the removal of slag, said to have been 30 ft. (9m) high, in the late 1830s; the work of Mr Byner, whose attention was later diverted to Beauport Park.⁶ Straker identified the site as lying close to the western entrance of the estate, on the south side of the drive, and in this area survives the best evidence of the works (Fig. 1). The remains of the slag heap extend for about 150m, east-west, and resemble those at Chitcombe, as a series of small ‘headlands’ dug away on their northern slope.⁷ Geophysical prospecting indicates that this heap extended across the present estate drive to the boundary with the alluvium on the floor of the Brede valley, covering an area in excess of 4000m². It is not possible to estimate with any certainty the former extent or average depth of the slag heap.

The source of ore for the site lies on the hill to the south, where a cap of Wadhurst Clay outcrops, and where there are several, large opencast workings, as well as evidence of medieval or post-medieval ore pits. The reason for the apparent distance between the source of ore and the working area may be related to the potential existence of a port or quay beside the Brede, where iron from not only Oaklands but also from the Beauport Park and Footlands works may have been trans-shipped. Margary postulated the existence of an early trackway, which ran along the ridge to the south of Oaklands, from the direction of Westfield, and then turned north, down Chapel Hill, to Sedlescombe bridge before continuing towards Footlands.⁸ The existence of such a track suggests some such facility near the bridge, and a compelling reason for locating the ironworks nearby rather than further up the hill. Reports suggesting a possible settlement beneath the site of the Pestalozzi Village have yet to be substantiated.⁹

The Field Group acknowledges gratefully the assistance of the Hastings Area Archaeological Research Group in the interpretation of this site.

A bloomery in East Grinstead, West Sussex

A small scatter of bloomery slag has been found in the north-east

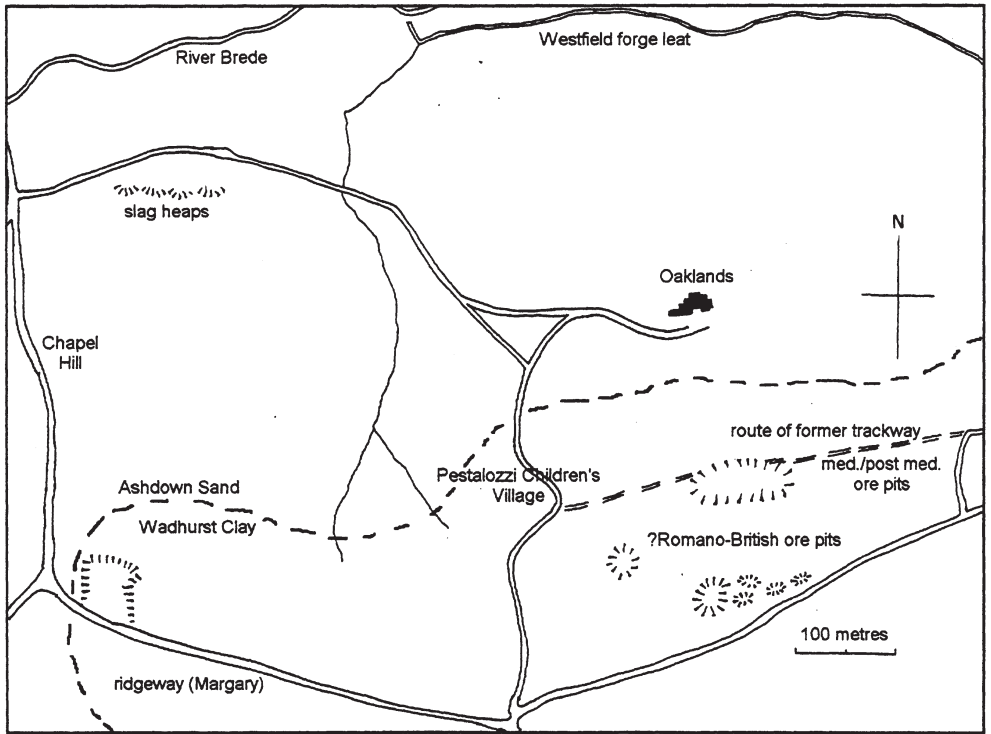


Fig 1: Oaklands Romano-British ironworks, Westfield, Sussex

corner of a field just south of the Felbridge Water, at TQ 3666 3926. Most of the fragments are less than 5cm long, but are scattered over an area of about 70m. There are examples of both smelting and forging slag. In the same area is a scatter of charcoal, although, like the slag, this has been widely dispersed by ploughing. Also, much of the slag shows signs of weathering, indicating that the field may have a long history of cultivation.

We are grateful to Stephanie and Jeremy Clarke, of the Felbridge & District History Group, for informing us of this site.

Mill Place Furnace, East Grinstead, West Sussex

Recent digging of trenches for electricity supply has afforded an opportunity to inspect sub-surface features in parts of the site (TQ 374349), confirming the basic layout of these works. The main features of the site are shown in Figure 2. The trench formed a continuous line from where an access track enters the site in the east, running close to the north bank of the Medway, on the southern side of the site, before swinging north and cutting through part of the former bay, then running parallel to it, and eventually turning north west into a field and dividing into two trenches. That considerable silting had taken place over the working area of the site was evident from the observation of blast furnace slag at a depth of 1 metre below the surface approximately 75m east of the bay (A), rising to a depth of only 20cm in the next 25m, and coming to surface about 30m from the southern end of the bay (B). At this point the stream bank is also largely composed of slag. Cutting through the southern-most part of the residual pond bay – now indicated by a rise of less than 20cm along the base of a fence line – very little evidence of the construction of the bay could be seen. A few scattered sandstone blocks, on one of which were indications of chiselling, suggested that the bay may have formerly been faced with stone, but that the stone had been robbed for other uses before the bay was removed. Most striking, however, was a depth of charcoal seen in the trench at the northern end of the

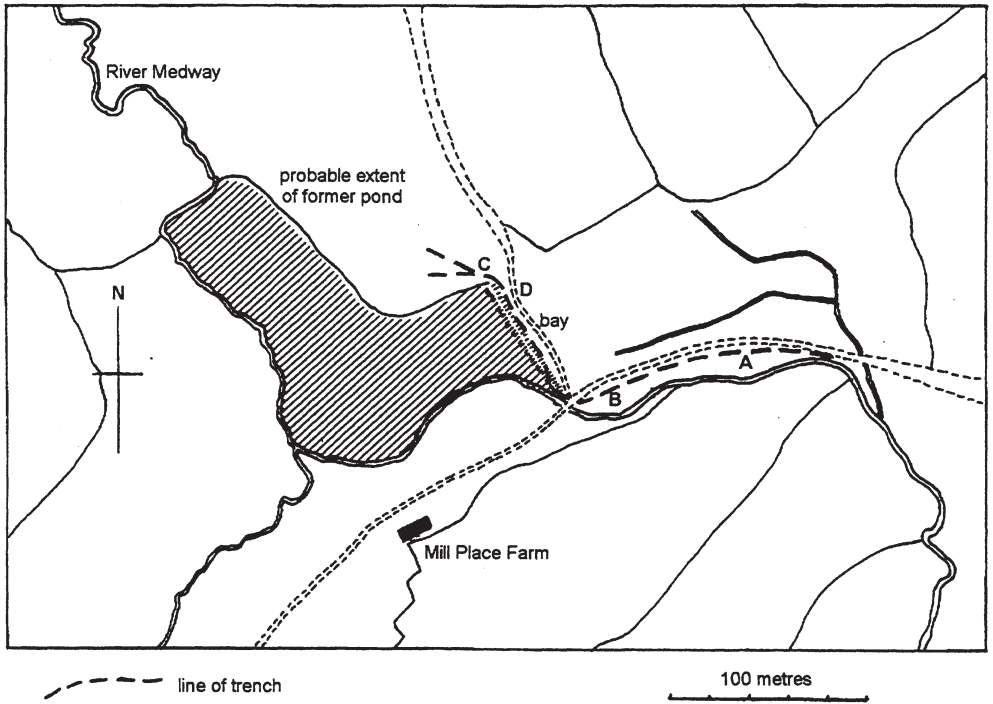


Fig 2: Mill Place Furnace, East Grinstead, Sussex

bay and extending into the field (C), where it was seen in a section of more than 1 metre thick. This heavy concentration of charcoal suggests the site of a former charcoal storage area, and indicates the probability of the furnace and its charging bridge being located at the northern end of the bay (D).

We are grateful to Mark Taylor, County Archaeologist for West Sussex, for informing us of the existence of the trench.

Corrigenda and Addendum

Owing to a recent minor change in the boundary between East and West Sussex, the locations of two areas of bloomery slag, at TQ 3763 3264 and TQ 3780 3260, should have been recorded under West Hoathly, West Sussex, not Forest Row as previously reported.¹⁰

The site discovered at TQ 855477 should have been recorded under Ulcombe parish, Kent, instead of Egerton.¹¹

The grid reference of the concentration of bloomery slag immediately north of Mare Pit Wood, West Hoathly, was omitted from the report on the discovery of the site. It is located at TQ 3755 3275.¹²

Notes and References

1. WIRG, *Wealden Iron*, 2nd series **18** (1998), 3
2. E. Straker, *Wealden Iron* (1931), 382; H. F. Cleere & D. W. Crossley, *The Iron Industry of the Weald* (1985), 290.
3. WIRG, *Wealden Iron*, 2nd series **20** (2000), 15-19.
4. H. F. Cleere, 'Some operating parameters for Roman ironworks', *Bull. Institute of Archaeology*, 13 (1976), 238.
5. M. A. Lower, 'Iron works of the county of Sussex', *Sussex Archaeological Collections*, **2** (1849), 174-5.
6. Straker, 329.
7. WIRG, *Wealden Iron*, 2nd series **8** (1988), 2-5.
8. I. D. Margary, *Roman Ways in the Weald* (rev. ed. 1965), 228-9.
9. Cleere & Crossley, 305.
10. WIRG, *Wealden Iron*, 2nd series **20** (2000), 4-5.
11. *Ibid.*, 4.
12. *Ibid.*, 5.

Iron-Working Sites in the Weald of Kent

A report of some recent fieldwork

Neil Aldridge

Ulcombe, Kent TQ 8424 4715

Belgic Bloomery and Cremation Cemetery, Jubilee Corner,
Ulcombe

This site was discovered during field-walking in 1994 in the parish of Ulcombe. Ploughing of former pasture had disturbed an Iron Age cremation cemetery. During the rescue excavation the cemetery was found to be overlying a contemporary bloomery hearth. The furnace (Figure 1), was roughly oval in plan and measured 2 metres in length by 1.3 metres at its centre. Walls of fired clay and stone survived to a height of 18cm in places. After the removal of the fill the walls of the hearth were found to be an average of 13cm in width. The concave base of the hearth contained a significant quantity of bloomery slag, cinder and charcoal and many fragments of the clay superstructure of the furnace. Some of the slag had signs of vitrification from contact with the clay walls of the furnace. A date of the 1st century BC through to the 1st century AD is suggested by the presence of six Belgic cremation vessels, two of which were found to contain fibulae. Cremation 1 contained an iron one-piece brooch with rod bow and Cremation 4 a badly corroded bronze brooch of Aylesford type. The pottery fabrics were all grog-tempered apart from the vessel of Cremation 4 which was of glauconitic clay from the Greensand, the nearest source of which lies 2.75km to the north. An associated Iron Age settlement probably lay to the north west of the cemetery and bloomery. During 1995 two further bloomery hearths of similar type were recorded during the excavation of a large pond close to a watercourse that marks the parish boundary of Ulcombe/Headcorn,

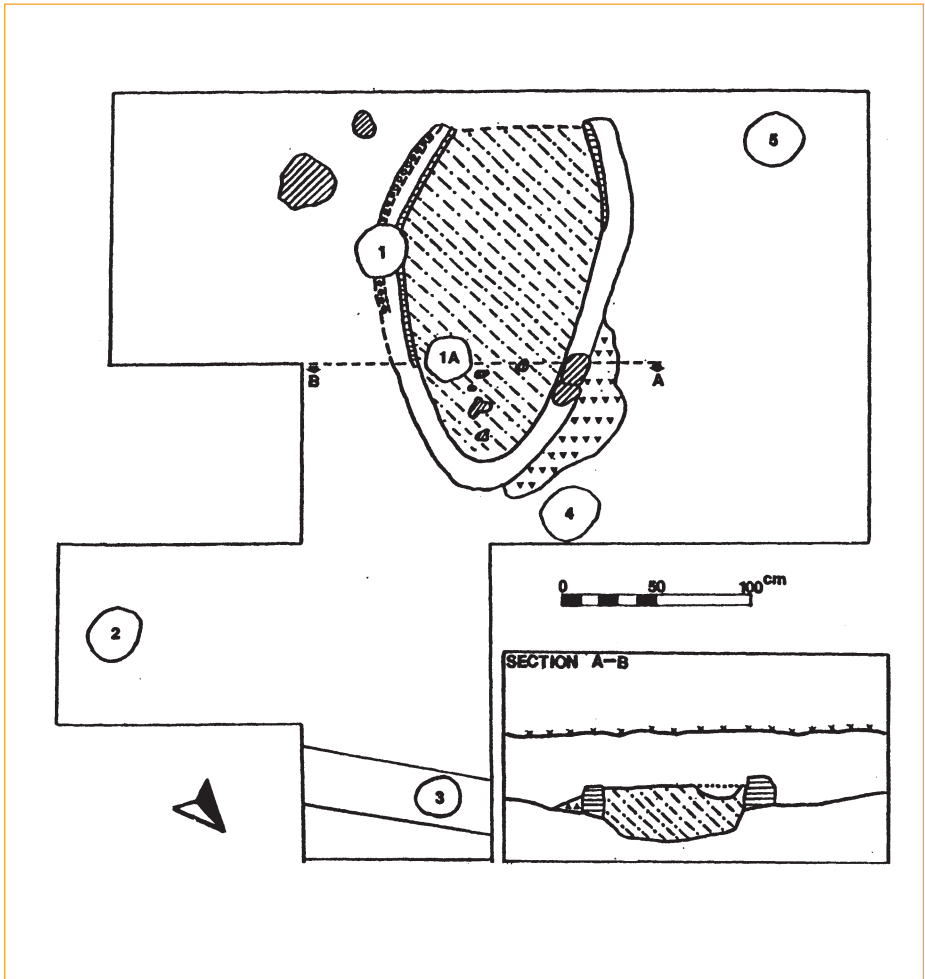


Fig 1: Belgic bloomery and cremation cemetery, Ulcombe, Kent

TQ 8378 4649. These hearths lay under some three metres of hillwash in a sandy alluvial soil. The dimensions and shape of the hearths were comparable with the earlier find which is situated 1km to the north east. Pottery from these features is of Middle Iron Age date; some slag and burnt clay was also recovered from the vicinity of the bloomeries.

Both of these sites are in the Low Weald, an area of heavy clay soils some distance from the iron bearing geology of the High Weald. Iron Age settlement appears to be surprisingly dense in this part of the Weald with field-walking often producing pottery sherds.

Ulcombe, Kent TQ 8610 4925

Bloomery slag is associated with sherds of grog-tempered pottery of Iron Age appearance at the above grid reference. The site is located just below the crest of the Greensand ridge.

Headcorn, Kent TQ 8313 4317

Bloomery slag and cinder appears to be associated with the Romano-British farmstead site found here in 1993 and partially excavated by the writer in 1994-5. The location of the ironworking debris lies beyond a probable ditch that appears to mark the southern-most extent of the site. A deposit of Bog Iron has been found at the base of the hill slope on which the site lies.

Cranbrook, Kent

Fieldwork has provided an amended line for the Rochester-Bodiam Roman road. The alignment postulated by Margary between Golford and Chittenden has been shown to be largely incorrect. The road was positively located by the use of a metal detector which showed that the road was surfaced with bloomery slag. This could also be seen when field-walking the course of the road. The places where the slag occurred appear to be largely in areas that would have become waterlogged during the autumn and winter. When the road was on higher land the slag was not so prevalent. The road varied

in width from 6m to the north of Folly Gill to 11m where it passed an ironworking site at TQ 8004 3525. The bases of four bloomery hearths were recorded here, close to the Roman road when it was sectioned, together with traces of domestic timber building. The scheduled site of Little Farningham lies to the east of the road, and it has been proposed that the area under protection will now be extended in order to include the new line of the road, which is located further to the west than had been earlier thought.

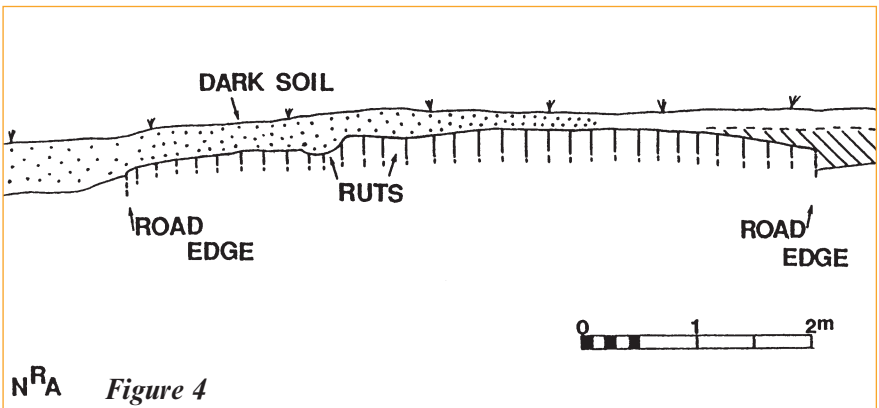
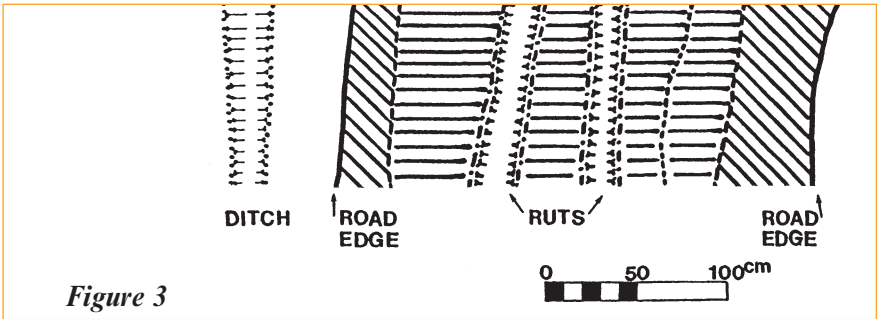
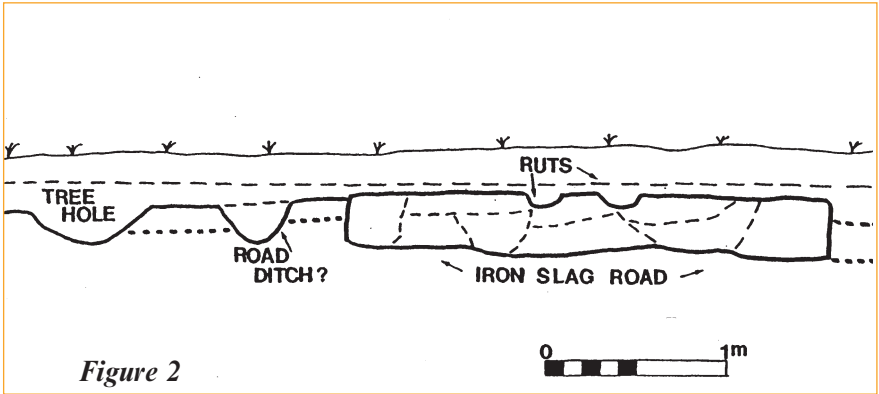
Benenden, Kent

A field survey along the line of the Benenden-Ashford Roman road has shown the course to be largely correct. The majority of the route examined so far is surfaced with bloomery slag.

Benenden School

The grounds of the school are traversed by the routes of two Roman roads first recorded by the Ordnance Survey in the late 19th century as being 'Ancient Roads'. Later these were identified as Roman by I. D. Margary in his book, *Roman Ways in the Weald*.¹ During the summer of 2000, building work at the school necessitated an archaeological watching brief as the proposed development lay in the path of the east-west road. No trace was found of the road at this point and it was suggested that this might suggest that it lay somewhat further to the north. A metal detector survey conducted during the past winter located both the east-west and the north-south Roman roads which were found to be metallised with iron slag. The east-west road is slightly further south than had been thought and the site of the road junction probably lay at TQ 801337, the site of the medieval manor of Hemsted. This would perhaps explain why it had been difficult for earlier fieldworkers to find evidence for the roads in this area.

To the south of Bishopsden Farm, Benenden, the slagged road was found to be intact and well preserved. The road was sectioned in two places. In the first section, TQ 8445 3485 (Figs 2 and 3) its width



N^{RA}

was 2.3m with a depth of 26cm of solid slag; there were traces of one side ditch. In section 2, TQ 8423 3487 (Fig 4), there appeared to be two adjacent road surfaces of slag and ironstone. The first was 2m wide; the second at a slightly higher level was 4m wide. It is hoped that ironworking sites will be found in this area to account for the large amount of bloomery material being utilised in the construction of this Roman road.

Reference

1. I. D. Margary, *Roman Ways in the Weald* (rev. ed. 1965), 222.

❖

Extracts from the Debenture Books of the Office of Ordnance, 1593-1610

Ruth Brown

A series of Debenture Books for the Office of the Ordnance survive in the Public Record Office. The series, beginning in 1593, is neither complete nor consistent; some years are completely missing, while others are covered by two or even three volumes. The books record items received by the Ordnance and what they cost; some also record movements to and from stores. A few volumes have entries that include the signature or mark of the contractor. Some of the earliest volumes are damaged and difficult to read. As with earlier extracts, I have expanded the abbreviations for ease of comprehension.

1 Thomas Johnson

The Debenture books cover the final years of Thomas Johnson's career. Thomas Johnson was the last of three generations who were connected with the Ordnance Office. His father John Johnson had been a gunfounder, while Cornelius Johnson had been Henry VIII's

blacksmith, possibly making the great wrought iron guns for the Mary Rose, and Cornelius's brother Henry Johnson had worked as the Surveyor of the Ordnance. They had come to royal service from the Low Countries. Thomas had succeeded to the position of Queen's gunstonemaker and gunfounder following the death of Ralph Hogge. In his career he worked with other founders and at a number of furnaces, although the Debenture Books give little idea of the complexity of his arrangements.¹

The first payment in the earliest surviving volume is a record of a delivery by Thomas Johnson on 3 January, 1592/3, of round shot, ranging from demi-cannon weighing 32 pounds each down to falcon weighing 2 pound, and cross bar shot from demi-culverin down to falcon (WO 49/17, 2). Cross-bar shot is round shot cast round a wrought-iron bar, so that spikes stood out on either side; examples have been found on the Elizabethan wreck discovered off Alderney.² There were two further deliveries of ammunition, both round shot and cross bar shot, in that year, on 19 July and 22 November (WO 49/17, 79 and 135). The latter included base and burr shot, small pieces of iron to fill case shot.

The following year, there are more references to Johnson, including payments for cast-iron guns. On 6 March he delivered four demi-culverins for Scilly, weighing just over six tons, worth £64 (WO 49/18, 17). On 16 April he delivered five long demi-culverins and a long saker with shot for Guernsey for which he was paid £91 10s (WO 49/18, 16; 27v). On 30 June, Johnson delivered four minions, small guns, for the ship *Quittance*, worth only £29 (WO 49/18, 57). A final delivery of guns was made in 12 December, four culverins and two demi-culverins "being faire longe yron ordnance ... at x li the ton", worth £118 (WO 49/18, 124). There were also two more deliveries of shot (WO 49/18, 10 and 98).

Deliveries continued through 1595. On 24 March nine demi-culverins were received, three heavier than the six and more expensive, in total £153 (WO 49/19, 40v). The following month Johnson was

paid £73 for two bastard culverin, weighing 39 cwt each and two demi-culverins of 33 cwt each.(WO 49, 19/51) The previous August, stores had been issued to Johnson for double-proofing culverins, bastard culverins and demi-culverins (WO 49/18, 158). The normal culverin threw a ball of 18 pounds while this particular bastard culverin was a smaller gun, throwing a shot of only 13 pounds. The wonderfully named Vulcan Skinner, blacksmith, supplied ladles and sponges for them (WO 49/19, 8). There were also four payments for ammunition in the year, (WO 49/19, 47, 67, 116 and 144). Most of these receipts bear Thomas Johnson's signature.

The last payment to Thomas Johnson was on 22 December 1595; by 27 March 1596 his widow Mary was being paid by the Office. On that date she was paid £132 15s for seven demi-culverins and four sakers (WO 49/20, 35). In April she was to be paid by the privy seal for four more demi-culverins and four sakers, as well as shot from demi-cannon down to falcon. The total came to £547 17s 6d (WO 49/19, 46). An even larger payment for shot was made to her on 20 August for £727 16s 5d (WO 49/20, 118). A last payment to "Marie Johnson widowe" for £196 10s was recorded on 26 December 1596 for two culverins and nine demi-culverins (WO 49/19, 190). All these were signed by John Manning. There is a record of John Manning of Down in Kent marrying Marjorie Johnson, daughter of Thomas Johnson, but as the names are common, it is not possible to decide whether this John Manning was Mary Johnson's son-in-law. There is however more information on Manning in an entry for 20 May 1598:

Receaved of John Manninge of the Burroughe of Southwarke Gonnstone maker of yron into her highness store within The office of The ordennce these parcels of Rounde shotte of yron under mentioned in liewe of the like quantity yssued out of her Majestie's saide store the xvth of July 1597 unto La Motte servante unto Monusieur Sourdeary for the service of the French king by vertue of her Majestie's warrante dated the xijth of July 1597. Vizt.

Round shotte For cannon of vii ynches CC

For demi cannon iiii C
No charge
(WO 49/22, 34)

A last reference to John Manning is on 30 September 1608:

A Debenture made unto John Manning Founder of yron short for the some of one hundreth fower score and eleven poundes five shillings and five pence for three score and seaven Barrells of square shott ... in weight tenn tonnes and a half viii C ij quarters and xj lib by him made and brought into his Majestie's stoare for the better supplie thereto by warrant from the right honourable Thomas late Earl of Dorset and Lord high Treasurer of England which at xvij lib xs the tonne amounteth to the saide some...
(WO 49/33, 93)

This probably refers to dice shot, squares of iron which are covered with lead; examples have been found on 16th century shipwrecks.

2 Illegal export of iron ordnance

At frequent intervals the English government was concerned about the export of cast-iron guns which could fall into the hands of enemy countries, principally Spain, or rival trading nations such as the Dutch. In 1609 a commission was set up to investigate the possible smuggling out of the country of iron guns. The Ordnance messenger, who carried letters to and from the commission to the iron founders, was paid for his travel and expenses.

19 Mar1608-9

A debenture unto Richard Cooke messenger for the Office of the Ordnance for the some of three poundes for his travell and charges being sent with Letters from the right honourable the Lord Carew Master of his majestie's Ordenance to certen Gonnefounders in the County of Sussex together with a Coppie of the Orders to be copied out by the Customes and Searchers of every port in the county aforesaide to prevent the unlawfull transportacion of yron Ordenance being ymployed in the service nyne daies at vj s viij d per diem which amounteth to the said some... (WO 49/34, 19)

29 June 1609.

A debenture made unto Richarde Cooke Messenger for Thoffice of Thordnance for his travell charges and expences, being ymployed in these his Majestie's services following, vizt:

For his travell charges and expences being sent by his Majesty's Commissioners appointed for the examinacon of abuses in the unlawfiill transportacion of Iron Ordnance with warrants to certen Gonnefounders, Customers and Searchers in the Counties of Sussex, Kent, and Glamorgan for their appearance before the said Commissioners being ymployed in the service xvij daies at vj s viij d per diem-v lib xiiij s iiij d.

More for his like charges, travell and expences being sent with warrant from the Officers of Thordnance into Kent for the staying of a pece of Brasse ordnance solde to one Joseph Hatch from the towne of Rye being ymployed in that service v daies at the rate aforesaid: xxxiiij s iiij d

For his charges travell and expences being ymployed by the said Commissioners at sondrie times of their meetinges in & about the Cittie of London and for his attendance there xix daies at severall tymes at ij s vj d per diem xlvij s vj d.

For the keeping of Derick Lambert & Stephen Greenesmith being committed unto him by the said Commissioners, remayning in his Custody iiij daies at iij s iiij d (WO 49/34, 34)

Stephen Greenesmith is known as a gunfounder, probably in Sussex although the exact site of his furnace has not yet been located.³ As we shall see below, it was not the last time that Cooke has the 'keeping' of Greenesmith. Derick Lambert may be a member of the Lambert family who worked in the iron industry in the 16th century or a Dutch merchant involved in smuggling. By September the Commissioners were looking further afield.

30 Sept 1609.

A debenture made unto Richard Cooke messenger for Thoffice of Thordnance for the some of seaven poundes for his travell charges and expences being sent with Warrants from the right honourable

the Lord High Treasurer of England to certen Gonnefounders in the County of Glamorgan for their personell appearances before his high Commissioners, and likewise with certan Orders from the Lord Carew to Customers and Searchers of the Portes of Cardiffe and Bristoll to be by them copied out against the unlawfiill transportacion of Ordenance being ymployed in the said service by the space of xv daies at vj s viij d per diem v lib. (W O 49/34, 69v)

On 3 Feb 1609-10 Roger Cooke was paid for eight days on commission business while the commissions themselves were renewed (WO 49/35, 17). Two days later, Tristram Slader was paid for attending the commission. Slader was one of the Ordnance's main suppliers of ships stores.

5 Feb 1609-10

A Debenture made unto Tristram Slader for the some of six poundes for his attendance from time to tyme upon the Commissioners appointed for the examination of abuses committed in casting and unlawfull transportation of Iron Ordennce being ymployed in writing the severall examinations of such person as were brought before them as also for engrossing the said severall examinations and retouming them into the Exchequer according to the effect of the commissioners graunted in that behalf. (WO 49/35, 19)

22 Oct 1610

A Debenture made unto Richard Cooke his Majestie's Messenger for the Office of the Ordnance for the some of fifty three shillings and fower pence vizt for his travell and charges sent by the Lords of his Majestie's privy Counsell with warrant to the Officers of his Majestie's' Customes at Bristoll and Cardiff to bring certificat what Ordnance have beene solde and transported since they received the Articles set downe against the unlawfull transportacon of Ordnance being ymployed in the service v daies at vj s viij d per diem xxxiiij s iiij d. And for the keepinge of Stephen Greenesmith being comitted by Sir William Wade and others the Commissioners by the space pf iii daies at v s per diem xv s. And lastly for his ymployment iii daies beinge sent about his Majestie's service by Mr George Hooker for

the taking of bondes of Edmund Mathewe esquire to his Majestie's use touching the casting and transporting of Ordenannce at xx d per diem vs. (WO 49/35, 125)

Edmund Mathew cast guns near Pentyrch near Cardiff at the end of the 16th century when he was already in trouble for illegally exporting guns to Spain.⁴ The Commission seems to have been wound up shortly afterwards.

Notes and References

1. For the careers of the Johnson family, see Edmund B. Teesdale, *Gunfounding in the Weald in the Sixteenth Century*, London, 1991.
2. D. M. McElvogue, 'Ordnance, Shot and Artefacts from a Sixteenth Century Wreck off Alderney' *Journal of the Ordnance Society*, **11** (1991), 9.
3. H. Cleere and D. Crossley, *The Iron Industry of the Weald* (2nd edition, Cardiff, 1995), 185.
4. Teesdale (1991), 107.



Wealden Ironmasters in the Midlands

P. W. King

The Weald was undoubtedly the region that acted as the progenitor of the early modern iron industry in Britain. As Brian Awty has shown, the technology was transferred from the Weald to other parts of England and Wales, mainly in the Elizabethan period, by the migration of skilled workers, that is founders, finers, and hammermen.¹ Certain work has given the impression that there was also a migration of ironmasters. While examples of such movement can be found, they are quite scarce, being confined to a handful in south Wales and the Midlands. The establishment of ironworks in the upper Taff and Cynon valleys by Anthony Morley (one of the Morleys of Glynde) and William Relfe (a younger son of William Relfe of Mayfield), which was the subject of an early article by W. Llewellyn,² is certainly a case of ironmaster migration. This also applies to the ironworks at Abercarn and elsewhere

in which Edmund Roberts was a partner.³ However, the further case offered by Bevan, of the Sidney family's involvement there, is probably better regarded as an example of a different phenomenon, that of the nobility exploiting their estates.⁴ Finally, George Mynne of Woodcote, a gentleman who owned estates in Epsom, which is of course not in the Weald, was from 1627 a partner in fanning the wire works at Tintern and the King's Ironworks in the Forest of Dean. In this he was in partnership with Thomas Hackett, who managed the works,⁵ and Sir Basil Brooke of Madeley in Shropshire, who almost certainly had iron and steel works at Coalbrookdale in that manor.⁶ After leaving Tintern, George Mynne went on in 1636 to build a furnace and forge at Blackpool in Pembrokeshire and a further forge at Whitland, Carmarthenshire.⁷ However these cases represent the sum of the evidence. Quite as important in establishing the iron industry in South Wales was London capital provided by Richard Hanbury, a London goldsmith with Worcestershire origins, and various associates. This is not so different from the way in which the coke iron industry was established there late in the eighteenth century, using capital brought in by entrepreneurs from London, Bristol and the Midlands.⁸

The charcoal iron industry was initially established in the Midlands as a result of courtiers and gentry perceiving blast furnaces and forges as a profitable means of disposing of otherwise unsaleable wood. At Pontypool, evidence was given that before the arrival of Richard Hanbury in 1576 'the manor of Wentsland and Bryngwyn was overgrown with great woods worth nothing for the want of use thereof.'⁹ Similarly Tilsop Furnace and Boraston Forge to the south of Titterstone Clee in Shropshire were built because Ralph Tomlins had 'there great store of woods and underwoods, which at that time and in that country would not yield any great profit by reason of the great store of wood thereabouts'.¹⁰ Some of the earliest ironworks in the Midlands were set up by courtiers with estates that they wanted to exploit, such as Robert Dudley Earl of Leicester at Cleobury Mortimer and Lord Paget on Cannock Chase. The Earl of Shrewsbury, the richest peer of his age, established ironworks on his estates at Goodrich (Herefs.), Shifnal (Salop.), and Sheffield.¹¹ However the first ironworks in the Midlands were probably on the fringes of Shirlet Forest to the north west of Bridgnorth, where the burial was

recorded in 1556 of John Morrell of Caughley Wood, ‘a Frenchman born head man or chief workman of John Munslowe’s smithie, called the founder thereof’;¹² the skill of ‘founder’ was only required at a blast furnace. Nearby, Walter Acton of Aldenham obtained licence in 1561 to continue using timber in his two iron mills in Morville, notwithstanding that it was within twelve miles of a navigable river.¹³

J.J. Goring examined the social status of the Wealden ironmasters who entered into bonds not to export ordnance without licence in 1574, and found that most were originally yeomen or minor gentry.¹⁴ His conclusion differed from that of Lawrence Stone, who stressed how many aristocrats built ironworks in the Midlands and North as part of their efforts to exploit their estates.¹⁵ This contrast seems to be the result of the different stage of economic development in the iron industry between the Weald and the rest of the country. By the Elizabethan period, about which both were writing, the Wealden industry has reached (or was approaching) maturity, whereas the industry in the Midlands and North was still in its infancy. By the 1590s the aristocracy seem to have been withdrawing from direct involvement in the iron industry, preferring to let others run their ironworks and to draw a steady income for themselves by selling wood to an ironmaster and collecting rent from him for the works. This put them back in their traditional role of rentier and left the ironmaster with the more difficult job of managing the ironworks and extracting a profit from it, something which the gentry and aristocracy as the governing class had neither the time nor ability to do. The change is well illustrated by what happened in south Staffordshire, which has been the subject of a recent article,¹⁶ of which the remainder of this contribution is a summary, paying particular attention to the Wealden aspects of events.

In south Staffordshire many of the ironworks seem to have been erected by gentry, but by the final years of the sixteenth century, or early in the seventeenth, many had passed into the hands of professional ironmasters, particularly Thomas Parkes. Such ironmasters seem to have been local men, and may sometimes previously have been clerks managing ironworks for the gentry. There was therefore no role for incoming ironmasters from the Weald to have fulfilled, and with two

exceptions there is no evidence that there were any. The will of Arthur Middleton (dated 1611) left legacies to his finers and hammermen at Donnington and Melbourne, implying that he had these forges and probably Hartshorne Furnace.¹⁷ He was a brother of David Middleton of Chayle in Sussex.

Thomas Parkes was an ironmaster operating on a very substantial scale. He has hitherto perhaps best been known for a series of incidents in 1597 when he and William Whorwood, of Sandwell Hall in West Bromwich, riotously expelled each other from half-shares in several furnaces and forges, in what afterwards became the Black Country. By the 1610s there were just three significant ironmasters' businesses in the area, belonging to Richard Parkes (Thomas's son), Walter Colman and Thomas Chetwynd, and Lord Dudley. The Parkes family had done well out of the iron industry and invested their profits in land. Accordingly, when Richard Parkes died, his son wanted to live as a gentleman and seems to have put the ironworks business up for sale. The purchasers were five men from Sussex. John Middleton of Horsham was a minor gentleman who had built Hill's Place there about 1610 and owned several farms in the area.¹⁸ Thomas Nye owned a compact freehold estate of over 3500 acres called the Hayes at Slinfold.¹⁹ Henry Goreinge was a scion of the noble Sussex family of the same name, and settled at Kingstone near Uttoxeter in Staffordshire. Nicholas Jordan was a barrister of the Inner Temple with a home at Chichester. Richard Middleton, the fifth partner in the purchase, was John's son, but another of John's sons (also John) was one of their managers. The five partners thus bought six furnaces and six forges from the second Thomas Parkes in 1618. By 1616 they had already acquired Chartley Furnace and Forge, where Goreinge was their manager, and probably also took over Ellastone Furnace and Forge and Oakamoor Furnace, buying wood for the purpose from the heirs of the Earl of Shrewsbury. In Sussex, John Middleton senior, Nicholas Jordan, and one Gravett operated Shipley Forge and Shipley or West Grinstead Furnace.

Thomas Nye, Richard Middleton, John junior, and Henry Goreinge seem separately to have managed various ironworks in the group until

John junior died in 1622. About that time Nye took over four furnaces and five forges within the later Black Country, leaving the other four partners with Chartley, Oakamoor and Ellastone, and Norton (Bridge) Forge and Stone Furnace, the latter formerly Parkes'. The iron industry, at least in that area, was experiencing considerable difficulties, which may be related to problems experienced by the woollen industry in exporting cloth to northern Europe. Accordingly, at Easter 1622 the remaining partners directed that the stock at Norton and Ellastone should be worked out, resulting in the closure of these forges and their associated furnaces (except Stone), £100 having to be paid to Sir Richard Fleetwood as a composition for one of them. Difficulties continued, and the 1623 dividend declared by the partnership consisted of 200 tons of iron. The other partners told Goreinge to work out the stock at Chartley too, but he professed himself unable to do so, as there were uncompleted contracts ('bargains') for wood and ironstone. However when the lease there expired in 1626 he took a new one for his own benefit, thus ending the partnership. The end of the partnership was followed by something like ten different Chancery actions, concerning payment of the purchase money for the business, which Thomas Parkes had left as a loan, and over accounts between the partners. Goreinge was accused of mis-valuing stock left at the end, and Jordan sought to be relieved of liability under bonds where he was a guarantor for John Middleton and Thomas Nye, and other related matters. This litigation is the source for most of what is known of the matter.

Thomas Nye's activities after his separation from the partnership are rather less clear, but there were proceedings after his brother Allen had distrained for an annuity that he had been granted out of Thomas' lands in Slinfold and Billingshurst (i.e. Hayes). These mention Thomas having 'Branford' (Bromford), 'Hince' (Hints), Perry and Little Aston Forges (omitting Bromwich, the other works acquired from Parkes). However Allen referred only to an agreement with him about 1628 to share Aston Furnace and 'Branford' Forge where 'one Ffolie' had the other part in a lease for fourteen years. This 'Ffolie' is undoubtedly Richard Foley, who founded a dynasty of ironmasters, which dominated the Midland iron industry for the rest of the century. Thomas Nye died intestate in

1631, leaving children who were under age. It is likely that his share in the partnership with Foley was sold to John Jennens, a Birmingham ironmonger,²⁰ whose family went on to become important ironmasters with interests spreading into the east Midlands.

The iron business in Staffordshire seems to have left most of the partners considerably out of pocket. In 1637 Thomas Parkes sued Richard Middleton and Thomas (his elder brother), because of a claim against him by Thomas Whorwood of Sandwell Hall for rent and payment for ironstone, in connection with the ironworks at [West] Bromwich. John Middleton (their father) had died in 1636, apparently insolvent. About 1626 he had mortgaged his estate for £1200 and then passed over all his goods and chattels, worth £2000, to Thomas Middleton, on condition that he paid his fathers' debts of £3400. Thomas also paid off the mortgage on the basis that his father should have a life interest with the remainder to Thomas' son, another John. Thomas inherited the manor of Prestwood (Sussex), worth a mere five marks, and, although appointed executor, had declined to prove his father's will, presumably because his debts exceeded the personal estate of £40, which his father had left. This is probably why no *inquisition post mortem* was conducted concerning John Middleton's lands until 1642, some six years after his death. In 1640 Henry Gorenge was seeking relief from a bond by John Middleton and Thomas Nye, to which Gorenge was party, although only as a guarantor. John Nye (Thomas' son) sold Hayes in 1651, and it is possible that this was also a result of debts incurred as an ironmaster in Staffordshire. Henry Gorenge seems to have done well out of the iron business. So did the Parkes, Foley, Chetwynd and Jennens families, but this seems to have been the result of getting out of the iron trade before 1620, or of being in it in the 1630s and beyond. The Colman family, like the Middletons and perhaps Nye, who left it in the 1620s, seem to have been left the poorer.

Ironmasters such as these had replaced the aristocrats as the proprietors of ironworks. The last two aristocrats to operate works on their own account in the West Midlands had been Lord Dudley and Sir Fulke Greville, who from 1589 rented from the Crown the ironworks on Cannock Chase; this had been forfeited to the Crown by the attainder

of Lord Paget. Lord Dudley had a number of ironworks on his estate, including five furnaces, which were probably not all operated at the same time. In the early 1620s he and his natural son Dud tried to smelt iron with coke, but this apparently did not prove a commercial success, and the ironworks seem to have been let to Richard Foley. Dud Dudley has been hailed by historians of coke iron as the forerunner of that business but, as the manager of ironworks for a member of the peerage, he was also the last of an old order.

Notes and References

1. B. G. Awty, 'The continental origins of Wealden ironworkers', *Econ. Hist. Rev. ser. II*, 34 (1981), 524-39. I have suggested elsewhere that the occurrence of 'Frenchmen who spoke Welsh', in an oral tradition recorded in the 19th century, in connection with the ironworks at Pontgwaithyhaearn in Bedwellty, also results from such a migration: P. W. King, 'Pont Gwaith yrHaeearn' *Gwent Local History*, 75 (1994), 13-16.
2. William Llewellyn, 'The Sussex ironmasters in Glamorganshire' *Arch. Camb.* 9 (1863), 81-119.
3. D. W. Crossley, *The Sidney Ironworks 1541-1573* (Roy. Hist. Soc, Camden 4th ser., 15, 1975), 32-3; H. R. Schubert, 'Shrewsbury letters: a contribution to the history of ironmaking' *J. Iron & Steel Inst.* 155 (1946), 521-5; H. R. Schubert, *History of the British iron and steel industry from c. 450B.C. to A.D. 1775* (Routledge and Kegan Paul, London, 1957), 366; M. B. Donald, *Elizabethan Monopolies: History of the Company of Mineral and Battery Works from 1565 to 1604* (Oliver & Boyd, London 1961), 97-100.
4. Thomas Bevan, 'Sussex ironmasters in Wales', *Trans. Cardiff Nat. Field Club*, 86 (1956-7), 5-12.
5. W. Rees, *Industry before the Industrial Revolution*, (University of Wales Press, Cardiff, 1968), 266 629-31; C. Hart, *Industrial History of the Forest of Dean*, (David & Charles, Newton Abbot, 1971), 12-13; *Victoria County History*, Surrey iii, 274-6.
6. Brooke had iron and steel works in Shropshire by 1622 (P.R.O., C 2/Jas.I/W2/47), and his steel works were certainly at Coalbrookdale by 1645: M. Wanklyn, 'Early steelmaking at Coalbrookdale' *Shropshire Newsletter* 44 (Jun. 1973), 3-6. He held the patent for steelmaking granted in 1614 to Elliot and Meysey, when in 1618 he was required to surrender it: *Calendar of State Papers Domestic 1611-18*, 228, 390; 1617-19, 294-5; *Acts of Privy Council 1616-7*, 394-5; 1617-9, 135, 279, 291, 396; 1619-21, 2-3, 77, cf PRO. E112/101/1226.
7. W. Rees, *Industry*, 309-12; National Library of Wales, Mss., Slebech 441; M. C. S. Evans, 'Pioneers of the Carmarthenshire iron industry', *Carmarthenshire*

- Historian* 4 (1967), 22-5.
8. M. B. Donald, *Elizabethan Monopolies*, 93-100.
 9. PRO. E 134/13 Jas.I/Hil.15, interrog. 41; E 134/13 Jas.I/Mich.16, interrog. and dep. 64-66.
 10. PRO. REQ 2/393/12.
 11. L. Stone, *The Crisis of the Aristocracy 1558-1641* (Oxford 1965: Clarendon Press), 347-8; H. R. Schubert, *History*, 357, 371, 379, 390.
 12. *Trans. Shops. Arch. Soc.* 6, 110; *Victoria County History*, Shropshire x, 238
 13. *Cal. Patent Rolls 1560-3*, 96.
 14. J. J. Goring, 'Wealden ironmasters in the age of Elizabeth' in E.W. Ives and others (eds), *Wealth and Power in Tudor England* (Athlone Press, London 1978), 204-27, esp. 211-4.
 15. L. Stone, *Crisis*, 344-56.
 16. P. W. King, 'The development of the iron industry in south Staffordshire in the 17th century: history and myth', *Trans. Staffs. Arch. & Hist. Soc.* 38 (1999 for 1996-7), 59-76. Offprints of this article have been given to West Sussex and Kent Record Offices.
 17. PRO. PROB 11/117 q.33 f.263. I am grateful to B.G. Awty for drawing my attention to this.
 18. *Sussex Inquisitions Post Mortem*, Sussex Record Society 14 (1912), no. 731. I owe this reference to Susan Djabri.
 19. West Sussex R.O, Add MS 41,060 and 41,061; Map of 'Mr Nyes lannd called Hays' Horsham Museum, accession HMX 1996.2998.1 I owe these references to Diana Chatwin.
 20. It should be stressed that this is a suggestion, which fits the evidence, but there is no direct evidence of a partnership between Foley and Jennens.



The Sussex Weekly Advertiser

Further extracts relating to the iron industry

Jeremy Hodgkinson

The recent acquisition, by East Sussex Record Office, of a microfilm of a missing bound volume of this, the earliest Sussex newspaper, has prompted a third collection of references to the Wealden iron industry in its last phase.¹

Monday July 5 1756

MARRIED Yesterday the Right Hon. The Earl of Ashburnham was married to the Hon. Miss Crawley, Daughter of _____ Crawley, an eminent Ironmonger, with a Fortune of 200,000L. After the Ceremony they immediately set out for Windsor.²

Monday November 1 1756

This is to acquaint the Public,

That there is now to be sold, at the Warehouse in the Cliffe, the Foot of the Bridge, late Mr John Whitfeld's, a large parcel of Iron, of all scantlings, made at Buxtead Forge, which is now in full Work, and will continue so, where Gentlemen, Blacksmiths, &c. may depend upon being supplied at 20L per Ton, ready money at the Forge, and at the Warehouse in the Cliffe at 20L 6s. where constant Attendance will be given by Christopher Chrippes.³

For six Months Credit 5 per cent will be expected. NB. Five Shillings per Hundred will be given for any Quantity of old Iron.

Monday June 6 1757

To be SOLD

[inter alia]

... A large Quantity of Wood-Land, or Coppice Wood, containing about four Hundred and forty Acres, well fenced, together with a large Pond, call'd Beech Furnace Pond, with the Furnace, House, Waste Land, and Appurtenances thereto belonging, in the several Parishes of Battle and Penhurst in the said County [Sussex].⁴

Monday January 23 1758

Last Monday Morning was married at Tunbridge in Kent, by the Right Rev. the Bishop of Gloucester, the Rev. Mr John Warren, of Tunbridge Wells, to Miss Noye, Neice of Mr Bowen, of Southborough in the said County, an agreeable young Lady with a

handsome Fortune.⁵

Monday March 17 1766

TO BE SOLD BY AUCTION

At the Star Inn, in Lewes, in one lot, on Wednesday the 26th Day of this instant March, at Twelve O'clock at Noon.

The Manor of Howbourn, with the Quit Rents and Casualties thereof together with several hundred of large Tillers, fit for repairs and some Underwood growing on the Waste, a very good Forge for making Bar Iron, built with Stone, a convenient house for the Forgerman, and a large Outbuilding for Iron and Coals, together with upwards of twelve acres of very fine Land, flowed with Water for the use of the Forge, situate in the parishes of Buxted and Mayfield, or one of them.⁶

One Farm containing about 160 acres of arable, meadow, and pasture ground, situate in the same parishes, let on a lease to Edward Gorringe, at 90L per annum, which expires at Michaelmas 1767.

About 20 acres of Woodland fit to cut, and about 660 Oak, and 60 Ash trees.

NB. All the premises (except the Forgerman's house, garden, coal house, and 16 acres of land) are Freehold, those Copyhold of Inheritance and held of the manor of Framfield, Fine small and certain.

Further particulars to be had of Mr. Rawlinson; Attorney, No. 4, in Garden Court in the Temple; or of Mr. Gilbert, Attorney, in Lewes aforesaid; and at the place of Sale.

Monday September 21 1767

This is to give NOTICE

THAT on Thursday the 1st Day of October next, there will be Sale at the house of THO. CAVIE, at Heathfield Furnace, deceased, of all sorts of Household Goods; Horses, Oxen, Cows, and some very fine young Beast; together with all sorts of Husbandry Tackle.

Notes and References

1. East Sussex Record Office, microfilm XA46/7; for previous extracts see WIRG, *Wealden Iron*, 2nd series **1** (1981), 14-16; and 2nd series **2** (1982), 30-36.
2. John, the 2nd Earl, married Elizabeth, daughter of John and Theodosia Crowley. John Crowley had died in 1728, and the Crowley daughters were among the most eligible spinsters of their day, their brothers John and Ambrose having predeceased them. Crowley & Co. had leased the Ashburnham ironworks since the late 1730s and continued to do so until the 1780s.
3. Buxted Forge is better known as Howbourn Forge. See WIRG, *Wealden Iron*, 2nd series **7** (1987) 16-19, for the background to Whitfield's and Cripps' tenancies. Whitfield's warehouse at Cliffe was on the east side of the river Ouse at Lewes.
4. Beech Furnace went out of use by 1740 as a condition of the lease of Robertsbridge Furnace to William Harrison and the Jukes brothers; WIRG, *Wealden Iron*, 2nd series **12** (1992), 54. This item confirms that it was still standing seventeen years later.
5. William Bowen, of Holden, Southborough, was ironmaster of Barden and Cowden furnaces. His will implies that he and his wife had no children, for his wife's niece, Mary Noye, was his principal legatee; Public Record Office PROB 11, 794 f.104. When Bowen died in 1771, his business was wound up by Warren, who seems subsequently to have become engaged in the ironmongery trade in partnership as Lukin and Warren, at Bowen's Southwark works, by Blackfriars Bridge; Medway Archives, Strood, Medway Navigation Freight Ledger, S/MN/FLf/1a.
6. Land tax records show that, by 1767, Edward Raby occupied Howbourn. He was working Woodcock Hammer, as well as Warren and Gravetye furnaces. Tillers were young trees usually growing from the stock or stool of a felled tree, another term for coppiced growths.

Mortars Cast for Gibraltar

Ruth Brown

In an earlier article I mentioned a series of 13-inch iron mortars, amongst the last guns that can be identified as being cast in the Weald for the British government. For the greater part of 18th century the Board of Ordnance had most of its mortars cast in bronze, except for the 13-inch mortars for Gibraltar. In 1718-9 Stephen Peters had provided 12 mortars for the recently gained colony and in 1745 these had been replaced by another 13 cast by William Bowen. Twenty-five years later they were in need of replacement.

In October 1771 the Board of Ordnance received the first news that not only were new mortars required, the number was to be increased to 20. And interest was at the highest level: 'His majesty having by his Warrant of the 11th instant been pleased to order 20 13-Inch Iron mortars to be sent to Gibraltar for the use of that Garrison.' The Board agreed, asking for an allowance to be paid and timber ordered for their beds. Lastly they asked Mr Hartwell, the Ordnance Modeller for 'a draught for a 13 inch mortar' (WO 47/78, 138v). On 28 October 1771, Hartwell produced 'a Draught for a 13 Inch Iron Mortar, and reported that a sufficient quantity of Timber of the proper size for making Mortar Beds, may be had of Mr Morris and Mr Wilson but that the said Timber will require to lay some time to Season after being cut out, before it is worked or made up into Beds'. The Board agreed to this and to a change agreed in cutting out the rough beds 'in order to prevent their breaking in time of action' (WO 47/78, 150v). The following month Wright and Prickett, who operated the old Falcon ironworks at Southwark twice offered to cast iron mortars for the Board.¹

This was followed by a long silence; it seems that the Board were

not happy with the design, as there is a reference in March 1772 to Hartwell producing a new draught 'computing the Chace at 3 Diameters and such other proportions as he thinks best for that length of Chace' (WO 47/79, 182v). In December 1772 the Ordnance received a reminder:

'The Earl of Rochford having in his letter of the 9th instant that His Majesty was pleased to direct by Warrant 11 October 1771 that 20 13-Inch Iron Mortars should be sent to Gibraltar and that he is informed by Lieutenant Governor Boyd that the said Mortars are not ready and that he is commanded to signify the King's Pleasure that the Board do forthwith prepare and send to Gibraltar the said Mortars as they are much wanted for the said Garrison'.

'Ordered a Letter to acquaint his Lordship that upon receipt of His Majesty's Warrant dated 11th October 1771 the Board gave orders for making 2 13-Inch Iron Mortars upon different principle by way of Experiment (as there was no such article then in Store) that the same are finished & will be proved forthwith & if they answer upon trial orders will be immediately given for Casting the remainder with all possible dispatch, but that it will require sometime to have them completed, and fitted to them beds before they can be sent to Gibraltar' (WO 47/80, 229v).

Intriguingly there is no evidence that the Board had had two mortars cast; none of the proofs or payments for the mortars are as early as this. Although it is possible that they asked Wright and Prickett at the time and paid much later, it is more likely that this is an early example of civil service double-speak and that they were stalling. However on 19th January the Board swung into action: 'Ordered that the Carron Company, Mr Raby, Messers English and Bradley and Messers Wright & Co provide 2 13-inch Iron Mortars each and send the same to Woolwich as soon as possible and that Draughts be delivered to them according to what was approved by the Board'. (WO 47/81, 94).

It was then that Wright and Prickett wrote to inform the Board that they had taken over a number of furnaces in the Weald.² By 18

May 1773 the proofs for the mortars were arranged (WO 47/81, 294). Unfortunately the early results were not encouraging. On May 1773 Alexander Raby presented three mortars for proof of which only two passed. English and Co had a worse record; both their mortars failed. Later in May Carron presented their two mortars, which also failed (WO 47/81, 308v). The Board's order that 'the Iron Mortars ordered for Gibraltar be sent there from time to time as they are ready' turned out to be wildly optimistic. There are no more proof records until November 1773, but it seems that Wright and Prickett presented two mortars that passed proof in August (WO 47/82, 173v). They were certainly rewarded with the rest of the contract, being given a warrant for the remaining 16 Iron Mortars in 14 Jan 1774.³

Meanwhile the first mortars had gone to Gibraltar, where it seems they were not quite so expected as the Ordnance thought, since they received a letter from the Ordnance officials there on 10th March 1774:

'Respective officers at Gibraltar having represented in their letter of 31st January last, that the Lieutenant Governor had enquired upon the arrival of the 5 Iron 13-Inch mortars by the ship Thanet, whether they were demanded by them upon which he being acquainted they were not, he therefore conceived the said Mortars are part of the number designed for the use of the Garrison'.

'Ordered to be acquainted that the said 13-Inch Iron Mortals are part of the 20 demanded by the Lieutenant Governor; and that 4 more are ready and will be sent the first Opportunity'.
(WO 47/83, 156).

This last statement turned out to be premature; in February 1774 Wright and company had four 13-inch land service mortars pass proof. After the failures of the year before the Board's officers must have been relieved, but on 22 March 1774 Thomas Hartwell wrote with bad news, 'that on looking at the 13-Inch Iron Mortars that were lately proved at Woolwich, he perceived something like the

Appearance of a hole being stopped up close to the vent in one of the said Mortars, that on his cutting away a Little of the cast metal he found a plug of wrought iron, drove in of 7¼ Inches long and got the same easily pulled out with a pair of Hand Vices; That he is of the opinion the same had been owing to their having first bored the Vent inclining quite the wrong way, and by that means missed going into the Chamber of the Mortar and then stopped up that hole and bored another fresh Vent before it, which being artfully done, could not easily be perceived without a very close inspection. Ordered a Letter to acquaint Mr Hartwell that the Board highly approves his care and attention, and that the Mortar is to be defaced and rendered unfit to be offered again & that Mr Wright attend the Board next Friday' (WO 47/168v). No record survives of the interview but Wright must have managed to retain the confidence of the Board since they continued to use him and he went on to finish the contract.

On 29 March 1774 Alexander Raby, winding up his affairs 'after leaving the foundry business' also requested payment for three Iron Mortars, so that he either persuaded the Board to take the refused mortar or replaced it (WO 47/83, 172). He was certainly paid for three mortars, presumably those sent to Gibraltar (WO 51/259, 103v 13 Aug 1773).

By early in July 1774 two more 13-inch mortars had been landed at Woolwich from Wright and Prickett (WO 47/84, 74v) and, by mid-August, 15 mortars were presented for proof, of which only one failed (WO 47/84, 108v). In November 1774 English and Company presented five 13-inch mortars; all failed. In the same proof Wright and Company presented three; all passed (WO 47/84, 175v). The following day, 22 November, the Ordnance ordered 'that the Respective Officers at Woolwich be acquainted that they are not to receive any more iron Mortars from the Gunfounders, the number wanted being now supplied and that the Gunfounders be acquainted herewith that no more may be cast at present'. (WO 47/84, 168v).

Wright and Company were paid for two mortars on 13 August

1773 (weighing together 59-0-25), while Raby on the same date was paid for three, weighing 97-1-19 (warrant dated November 1773; WO 51/256, 158v; 59, 103v). A year later Wright was paid, on the 20 August 1774 for 16 mortars, weighing in total 472-2-2 (warrant dated 14 January; WO 51/261, 60v).

A few of these mortars have survived; one stands in the graveyard of Garrison Church, Portsmouth. It bears a well-formed G, cast on to the right trunnion, and the monogram of George III who was so interested in its casting. The weight, engraved above the shell-shaped vent is 29-2-13. The weight, which accords well with the average weights of Wright and Prickett's payments, and the presence of the G, the mark of Gloucester Furnace, confirms the identity of this gun as one of Wright and Prickett, rather than of Raby's.

References

1. R. R. Brown, 'Wealden ironmasters and the Board of Ordnance after 1770', WIRG, *Wealden Iron*, 2nd series **14** (1994), 32.
2. *ibid.* 33-34.
3. *Ibid.* 35.

Index to *Wealden Iron* 2nd Series 21 (2001)

Compiled by J. S. Hodgkinson

Compiler's Note

Wealden locations are listed by parish; other locations are listed by ancient county. Names of shipping vessels and publications are in italics.

- Abercarn Furnace – *see* Glamorgan
Acton, Walter, 21
Aldridge, N., 9
Ashburnham, John, 2nd Earl of, 28
Ashburnham (East Sussex)
 Ashburnham Furnace, 30n
Ashdown Forest, 2
Barden Furnace – *see* Bidborough
Battle (East Sussex)
 Beauport Park bloomery, 3, 4
 Beech Furnace, 28, 30n
Beech Furnace – *see* Battle
Benenden (Kent), 12
 Benenden School, 12
Bishopden farm, 12
Bidborough (Kent)
 Barden Furnace, 30n
Bletchingley (Surrey)
 Cinderhill, 3
Blackpool Furnace & Forge – *see*
 Pembrokeshire
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